REMARKS

Status of the Application

Claims 1-16 are the claims that have been examined in the present application. Claims 1-16 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Gibbs (U.S. 5,463,648).

By this Amendment, Applicants are adding new claims 17 and 18.

Preliminary Matters

Applicants thank the Examiner for accepting the drawings filed on September 29, 2003. Applicants also thank the Examiner for withdrawing the §102(b) rejection over Nishi, as well as the §103(a) rejection over Nishi in view of Hess.

Claim Rejections under 35 U.S.C. § 102

Claims 1-16 stand rejected under 35 U.S.C. § 102(b) as being anticipate by Gibbs (U.S. Patent No. 5,463,648).

Claim 1 recites, in part, performing one of a first operation of stopping heating of the semiconductor laser and a second operation of decreasing an amount of heat supplied to the semiconductor laser, almost simultaneously with startup of the semiconductor laser." Gibbs teaches using a bi-level pulse forming network (pfn) which heats the laser diode junction without producing light (subthreshold), and maintains temperature stabilization during operation (superthreshold) and shortened turn on time by switching from subthreshold to superthreshold. See col. 1, lines 49-61. However, Gibbs fails to teach or suggest that the heating of the laser diode is stopped, or that the amount of heat supplied to the laser diode is decreased almost simultaneously with startup of the laser diode. Rather, Gibbs teaches that the pfn is used

throughout subthreshold *and* superthreshold operation of the laser diode. In particular, when a laser is on, a FET 12 is turned on to dissipate power. Thus, there is no cessation of the heating or decrease thereof during laser firing.

Further, while Gibbs discloses that the laser diode is heated with the subthreshold current, the difference between the amount of heat generated in the subthreshold mode and that in the superthreshold mode is still large so that it is necessary to take substantial time for stabilizing the laser light. In the claimed invention, the amount of heat applied when the laser diode stops emitting light can be adjusted to keep the temperature of the laser diode device constant regardless of whether or not the laser diode emits light, greatly shortening the time necessary for stabilizing the laser light.

Therefore, because Gibbs fails to teach all of the elements of claim 1, claim 1 should be patentable over the applied art.

Claims 2-16 should be patentable at least by virtue of their dependency from claim 1.

Additionally, claim 2 should be patentable for reasons independent of its dependency. Claim 2 recites "said heater heats a vicinity of the semiconductor laser at a heating rate which approximately corresponds to a heat-generation rate at which the semiconductor laser generates heat when the semiconductor laser is in operation..." Gibbs fails to teach this aspect of claim 2. Gibbs teaches that heat applied during the subthreshold operation results in .576 J, while in operation mode, 1.8 J are applied. See Gibbs, col. 3, lines 24-37. Therefore, Gibbs fails to teach that the heater heating rate and the generation rate of the laser in operation approximately correspond. Claim 2 should be patentable over Gibbs.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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